WHAT IS CLAIMED IS

1. A branch prediction method comprising the steps of:

a) determining branch prediction data indicating a state of branch prediction according to whether a branch is actually made or not;

b) performing a branch prediction according to the branch prediction data; and

c) correcting the branch prediction data according to whether a branch is actually made or not.

2. The method as claimed in claim 1, wherein the step c) selects a predetermined branch prediction changing table from a plurality of branch prediction changing tables previously weighted according to a history of whether or not branches are actually made, reads therefrom branch prediction updating data corresponding to the branch prediction data, and determines the read branch prediction updating data as a new branch prediction data.

3. The method as claimed in claim 1, wherein: the step c) comprises the steps of:

c-1) obtaining branch prediction data corresponding to a branch instruction from a branch prediction table;

c-2) obtaining branch prediction supplementary data according to a history of whether or not branches are actually made;

c-3) selecting a branch prediction updating table corresponding to the branch prediction supplementary data from a plurality of branch prediction updating tables storing branch prediction data having different weights in transition directions of the branch prediction data, and outputting branch prediction updating data corresponding to the branch prediction data; and

c-4) updating the branch prediction table according to the branch prediction updating data of the branch prediction updating table.

4. The method as claimed in claim 1, wherein the step c) sets weightings in transition directions of the branch prediction data according to preset profile information.

5. An arithmetic and logic unit comprising:

a first part determining branch prediction data indicating a state of branch prediction according to whether a branch is actually made or not;

a second part performing a branch prediction according to the branch prediction data;

a third part correcting the branch prediction data according to whether a branch is actually made or not.

6. The unit as claimed in claim 5 wherein said third part selects a predetermined branch prediction changing table from a plurality of branch prediction changing tables previously weighted according to a history of whether or not branches are actually made, reads therefrom branch prediction updating data corresponding to the branch prediction data, and determines the read branch prediction updating data as a new branch prediction data.

7. The unit as claimed in claim 5, wherein said third part comprises:

a part obtaining branch prediction data corresponding to a branch instruction from a branch prediction table;

a part obtaining branch prediction supplementary data according to a history of whether or not branches are actually made;

a part selecting a branch prediction updating table corresponding to the branch prediction supplementary data from a plurality of branch prediction updating tables storing branch prediction data having different weights in transition directions of the branch prediction data, and outputting branch prediction updating data corresponding to the branch prediction data; and

a part updating the branch prediction table according to the branch prediction updating data from the branch prediction updating table.

8. The unit as claimed in claim 5,

wherein said third part sets weightings in transition directions of the branch prediction data according to preset profile information.

9. An information processing apparatus comprises the arithmetic and logic unit claimed in claim 5.

10. An arithmetic and logic unit comprising:

a first part performing a branch prediction in response to a branch instruction;

a second part updating a transition probability of branch prediction according to whether a branch is actually made or not;

a third part detecting that a process is switched; and

a fourth part initializing the branch prediction information when said third part detects that the process is switched.

11. The unit as claimed in claim 10, wherein said fourth part performs initialization based on prediction information given to the branch instruction.

12. The unit as claimed in claim 10, wherein said fourth part performs initialization according to a branch destination of the branch instruction.

13. A branch prediction method comprising the steps of:

a) performing a branch prediction in response to a branch instruction;

b) updating a transition probability of branch prediction according to whether a branch is actually made or not;

c) detecting that a process is switched; and

e) initializing the branch prediction information when the step c) detects that the process is switched.

14. The method as claimed in claim 13, wherein the step e) performs initialization based on prediction information given to the branch instruction.

15. The method as claimed in claim 13, wherein the step e) performs initialization according to a branch destination of the branch instruction.

16. An information processing apparatus comprising:

a first part performing a branch prediction in response to a branch instruction;

a second part updating a transition probability of branch prediction according to whether a branch is actually made or not;

a third part detecting that a process is switched; and

a fourth part initializing the branch prediction information when said third part detects that the process is switched.

17. The apparatus as claimed in claim 16, wherein said fourth part performs initialization based on prediction information given to the branch instruction.

18. The apparatus as claimed in claim 16, wherein said fourth part performs initialization according to a branch destination of the branch instruction.